

### Features

- Protects up to 5 lines
- Low leakage: nA level
- Low clamping voltage
- Excellent surge protection (80W at 8/20 $\mu$ s)
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge:  $\pm 30$ kV
    - Contact discharge:  $\pm 30$ kV
  - IEC61000-4-4 (EFT) 40A (5/50ns)
  - IEC61000-4-5 (Lightning) 7A (8/20 $\mu$ s)
- RoHS Compliant

### Applications

- Audio Players
- Peripherals
- Portable Instrumentation
- Desktops PC and Servers
- Microprocessor Based Equipment
- Cell Phone Handsets and Accessories
- Notebook, Laptop, and Palmtop Computers

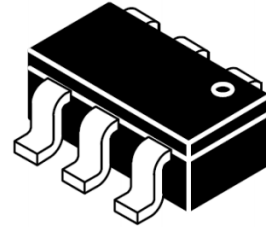
### Mechanical Characteristics

- Package: SOT23-6
- Lead Finish: Matte Tin
- Case Material: "Green" Molding Compound
- UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 3 per J-STD-020
- Terminal Connections: See Diagram Below
- Marking Information: See Below

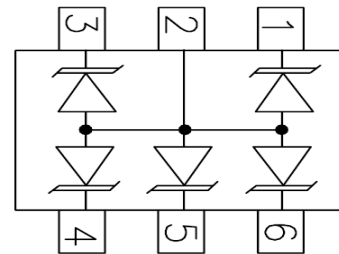
### Absolute Maximum Ratings (T<sub>amb</sub>=25°C unless otherwise specified)

| Parameter                       | Symbol           | Value       | Unit |
|---------------------------------|------------------|-------------|------|
| Peak Pulse Power (8/20 $\mu$ s) | P <sub>pp</sub>  | 100         | W    |
| ESD per IEC 61000-4-2 (Air)     | V <sub>ESD</sub> | $\pm 30$    | Kv   |
| ESD per IEC 61000-4-2 (Contact) |                  | $\pm 30$    |      |
| Operating Temperature Range     | T <sub>J</sub>   | -55 to +125 | °C   |
| Storage Temperature Range       | T <sub>STJ</sub> | -55 to +150 | °C   |

### Dimensions SOT-26



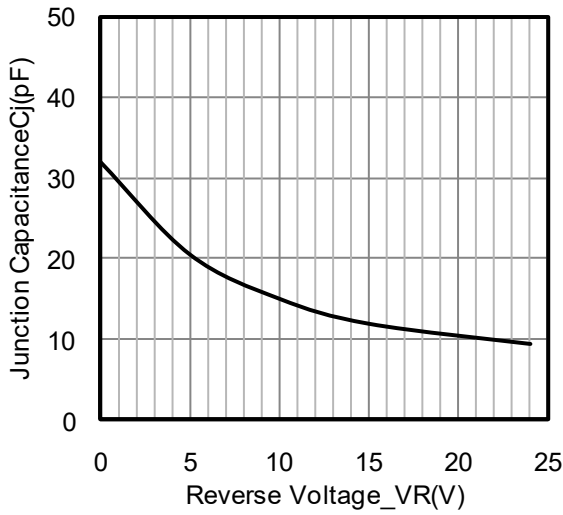
### Pin Configuration



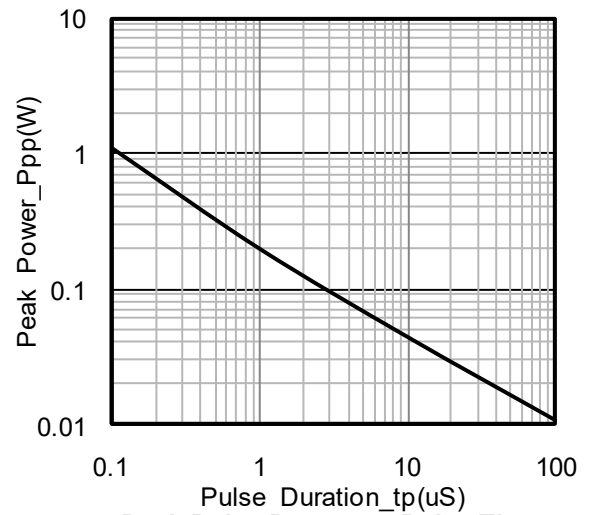
## Electrical Characteristics (TA=25°C unless otherwise specified)

| Part Number | Device Marking | V <sub>RWM</sub><br>(V) | V <sub>BR</sub><br>(V) | I <sub>T</sub><br>(mA) | V <sub>C</sub><br>@1A | V <sub>C</sub> |      | I <sub>R</sub><br>μA<br>(Max) | C<br>(Pf)<br>(Typ.) |
|-------------|----------------|-------------------------|------------------------|------------------------|-----------------------|----------------|------|-------------------------------|---------------------|
|             |                |                         |                        |                        |                       | (Max)          | (@A) |                               |                     |
| USMS05C     | 0505           | 5                       | 6                      | 1                      | 10                    | 18             | 7    | 0.2                           | 32                  |

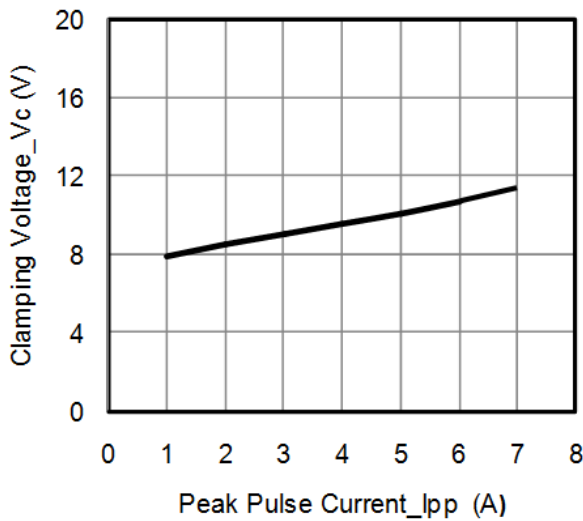
Typical Performance Characteristics ( $T_A=25^\circ\text{C}$  unless otherwise Specified)



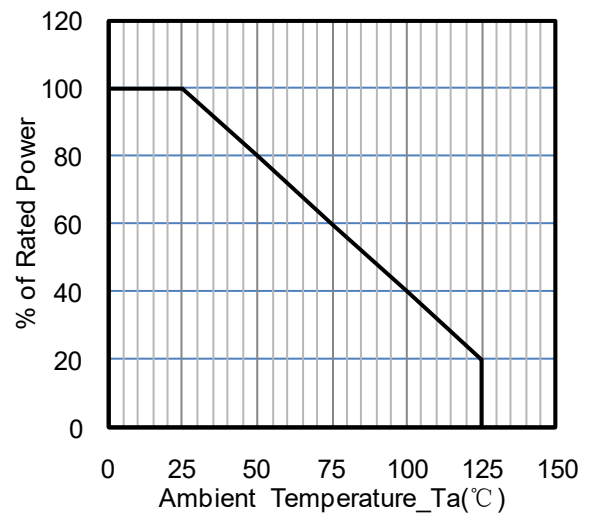
Junction Capacitance vs. Reverse Voltage



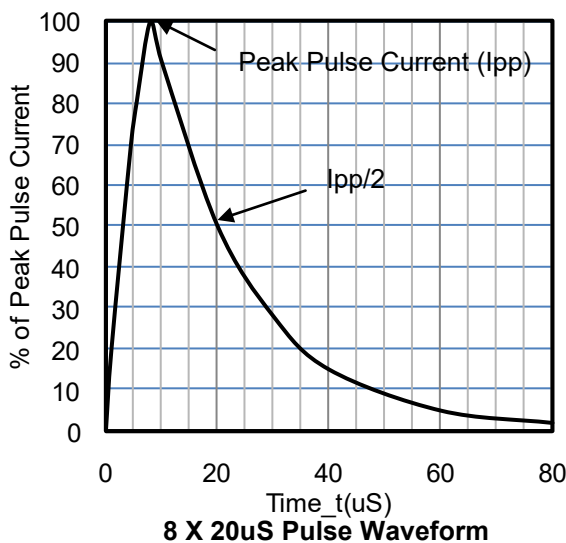
Peak Pulse Power vs. Pulse Time



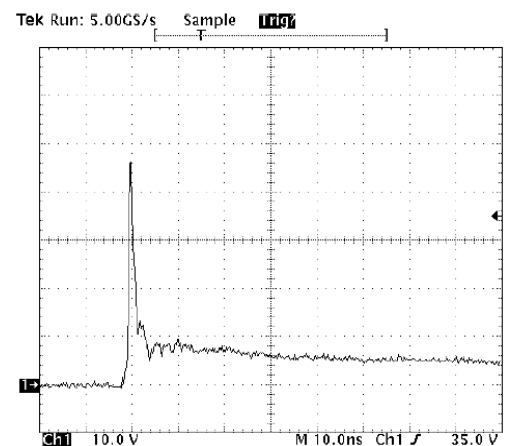
Clamping Voltage vs. Peak Pulse Current ( $t_p = 8/20\mu\text{s}$ )



Power Derating Curve



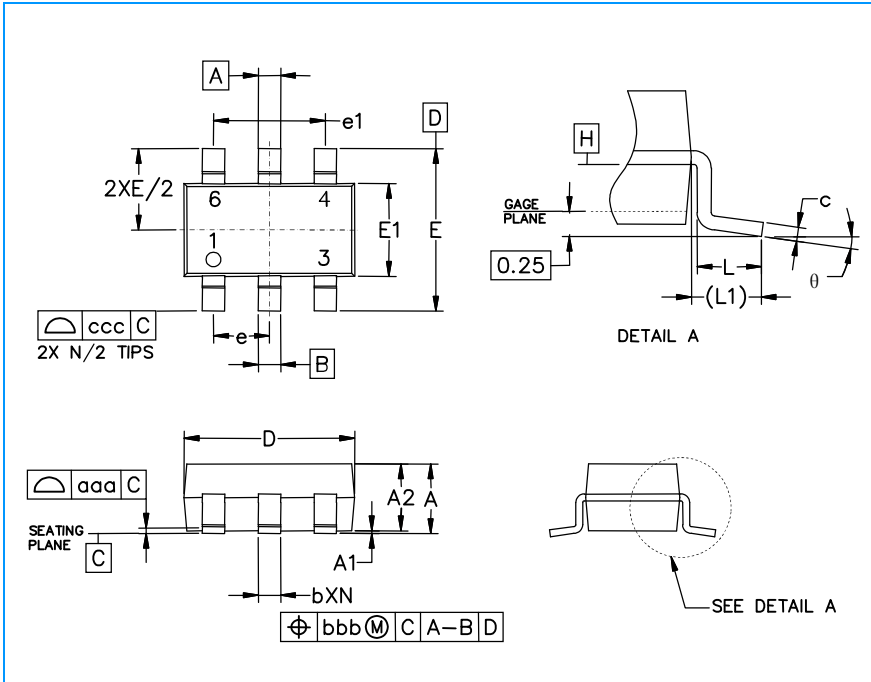
8 X 20 $\mu\text{s}$  Pulse Waveform



ESD Clamping Voltage

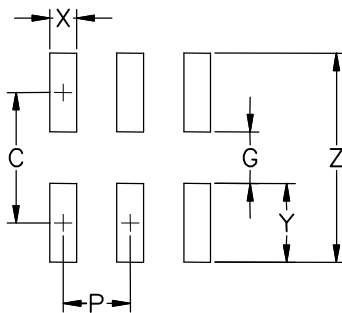
8 kV Contact per IEC61000-4-2

## SOT-26 Package Outline & Dimensions



| Symbol | Inches    |       |       | Millimeters |      |      |
|--------|-----------|-------|-------|-------------|------|------|
|        | Min.      | Nom.  | Max.  | Min.        | Nom. | Max. |
| A      | 0.035     | -     | 0.057 | 0.90        | -    | 1.45 |
| A1     | 0.000     | -     | 0.006 | 0.00        | -    | 0.15 |
| A2     | 0.035     | 0.045 | 0.051 | 0.90        | 1.15 | 1.30 |
| b      | 0.010     | -     | 0.020 | 0.25        | -    | 0.50 |
| c      | 0.003     | -     | 0.009 | 0.08        | -    | 0.22 |
| D      | 0.110     | 0.114 | 0.122 | 2.80        | 2.90 | 3.10 |
| E1     | 0.060     | 0.063 | 0.069 | 1.50        | 1.60 | 1.75 |
| E      | 0.110 BSC |       |       | 2.80 BSC    |      |      |
| e      | 0.037 BSC |       |       | 0.95 BSC    |      |      |
| e1     | 0.075 BSC |       |       | 1.90 BSC    |      |      |
| L      | 0.012     | 0.018 | 0.024 | 0.30        | 0.45 | 0.60 |
| L1     | (0.024)   |       |       | (0.60)      |      |      |
| θ      | 0°        | -     | 10°   | 0°          | -    | 10°  |
| aaa    | 0.004     |       |       | 0.10        |      |      |
| bbb    | 0.008     |       |       | 0.20        |      |      |
| ccc    | 0.008     |       |       | 0.20        |      |      |

### Soldering Footprint



| Symbol | Inches  | Millimeters |
|--------|---------|-------------|
| C      | (0.098) | (2.50)      |
| G      | 0.055   | 1.40        |
| P      | 0.037   | 0.95        |
| X      | 0.024   | 0.60        |
| Y      | 0.043   | 1.10        |
| Z      | 0.141   | 3.60        |